

FINDINGS OF FACT AND DIRECTOR'S DECISION

In the Matter of the Issuance of a Temporary Permit To Whitefield Power and Light Company Located in Whitefield, New Hampshire

The New Hampshire Department of Environmental Services, Air Resources Division established a pre-construction permit program for new stationary sources or stationary sources making modifications. The permitting thresholds for this program are specified in New Hampshire Code of Administrative Rules, Env-A 607.01, *Specific Applicability for Temporary Permits*. Pre-construction permits, also called "Temporary Permits" are issued for a period of 18 months. The Temporary Permit allows the facility to construct and operate a device based on terms and conditions specified in the permit. In some cases, the Temporary Permit requires certain testing to be completed in order to verify compliance with permit terms and conditions once the device is constructed and operational.

There are typically four phases in the Temporary Permit process. They are as follows:

- First, an applicant files an application to obtain a Temporary Permit. Once the application is received by DES, it undergoes an initial review to ensure that the information submitted is complete and includes all applicable regulatory requirements. If so, a "completeness determination" in the form of a letter is issued by DES.
- After the application has been deemed administratively complete, DES undertakes an extensive technical review. This may include, but is not limited to, facility site visits and an analysis of historical information. Once DES has completed this technical review and is confident that the application accurately reflects the facility's operations, DES develops a "draft Temporary Permit." The draft Temporary Permit contains all applicable regulatory requirements (both state and federal) that pertain to the facility. As noted above, the draft Temporary Permit may also contain certain testing requirements to verify compliance with permit terms and conditions.
- Once the draft Temporary Permit is prepared, a notice is published as required by Env-A 621, *Permit Notice and Hearing Procedures: Temporary Permits and Permits to Operate*. The public, the United States Environmental Protection Agency (EPA), and any other interested parties are invited to submit comments on the draft Temporary Permit. An opportunity for a public hearing is also provided.
- After all public comments have been received and evaluated by the DES, a final determination regarding the permit is made by the Director of the Air Resources Division (Director). If the determination is favorable, the draft Temporary Permit is finalized and issued. A draft Temporary Permit may be modified as a result of comments received during the public comment period. If modified, as in this case, a formal document is generated to address changes made to the draft Temporary Permit. This document is called the "Findings of Fact and Director's Decision."

Any person aggrieved by the Director's decision can file a notice of appeal within 10 days of issuance of the final Temporary Permit, with the Air Resources Council in accordance with the provisions of Env-A 621.10, *Appeals*, and Env-AC 206, *Appeals Procedures*.

Background

Whitefield Power and Light Company (Whitefield) owns and operates a 16 megawatt net output power generation facility on Airport Road in Whitefield, New Hampshire. The primary source of emissions at the facility is the Babcock and Wilcox Wood-Fired Boiler. The boiler burns wood to produce steam that drives a steam turbine that generates electricity for sale.

The boiler design is a spreader stoker with a vibrating grate. The maximum heat input rate of the boiler is 220 MMBTU/hr burning whole tree wood chips, sawdust, or clean processed wood (wood that exhibits fuel characteristics equivalent to "whole tree wood chips" and "sawdust" with respect to the ultimate and proximate analysis of the fuel). The flue gas from combustion of the wood runs through a multicyclone and an electrostatic precipitator (ESP) to control emissions of particulate matter. The boiler stack is equipped with a continuous emissions monitoring system that monitors carbon monoxide (CO), carbon dioxide (CO₂), nitrogen oxides (NO_x), opacity and volumetric flow. The facility also operates an emergency diesel generator, a fire pump and a cooling tower.

On June 23, 2004, an application requesting to install and operate a regenerative selective catalytic reduction system to reduce NO_x emissions was filed by Whitefield with the New Hampshire Department of Environmental Services, Air Resources Division. Additional information supporting the original application was filed under the claim of confidentiality on June 25, 2004, June 29, 2004 and July 7, 2004.

In accordance with the New Hampshire Code of Administrative Rules, Env-A 621, *Permit Notice and Hearing Procedures: Temporary Permits And Permits to Operate*, a notice of request for public comments and opportunity for a public hearing was published in the *Union Leader* and the *Caledonian Record* on July 23, 2004. The notice invited public comment and indicated that a public hearing for the Temporary Permit was scheduled on August 25, 2004 at the McIntyre School Apartments in Whitefield, New Hampshire. The notice also stated that any comments received during the public comment period or at the public hearing would be considered in making a final decision. The notice stated that the deadline for written comments was August 25, 2004. However, this date was extended to August 30, 2004 at the conclusion of the public hearing.

During the public hearing, several citizens offered testimony, comments, and questions regarding the proposed project at the Whitefield facility. Additional, written testimony was received on August 30, 2004.

Proposed Project Description

Whitefield has voluntarily requested to install and operate a regenerative selective catalytic reduction (RSCR) system to reduce NO_x emissions from the wood-fired boiler. The purpose of installing and operating the RSCR system is to qualify for the renewable energy programs in other New England States such as Massachusetts, Connecticut and Rhode Island.

Based on information supplied by Babcock Power Environmental, Inc. the RSCR system is a "tail-end" selective catalytic reduction (SCR) system, located after the particulate matter control equipment (multicyclone and the electrostatic precipitator). The RSCR system removes NO_x from the flue gas by using a catalytic process to achieve the desired level of NO_x reduction. The process uses a reactant (in this case, ammonia), to be added to the flue gas stream to convert NO_x to reaction products, nitrogen (N₂) and water (H₂O). Since the RSCR is designed to operate after the particulate matter control equipment, the flue gas is significantly below the temperature required for a NO_x SCR catalyst to operate and meet performance. Therefore, the flue gas temperature must be elevated to proper catalyst temperatures for the system to perform as desired. This is achieved by using two diesel fuel fired burners located within the RSCR system having a combined maximum heat rating of 1.8 million BTU/hr.

The SCR process converts the NO_x contained in the flue gas into N₂ and H₂O with the use of ammonia (NH₃) as the reactant. The basic reactions are the following:

1. $4\text{NO} + 4\text{NH}_3 + \text{O}_2 \rightarrow 4\text{N}_2 + 6\text{H}_2\text{O}$
2. $2\text{NO}_2 + 4\text{NH}_3 + \text{O}_2 \rightarrow 3\text{N}_2 + 6\text{H}_2\text{O}$

The following side reactions may occur on a small scale:

3. $4\text{NH}_3 + 3\text{O}_2 \rightarrow 4\text{N}_2 + 6\text{H}_2\text{O}$
4. $4\text{NH}_3 + 5\text{O}_2 \rightarrow 4\text{NO} + 6\text{H}_2\text{O}$

To achieve sufficient reaction rate at the designed operating temperature, specially formulated catalysts have to be used. The catalyst used in this application is a formulation of titanium, vanadium and tungsten applied to a ceramic substrate. Before the flue gas enters the RSCR catalyst, ammonia is added and mixed in such a way that a homogeneous distribution of ammonia and all the gaseous species in the flue gas is achieved. In addition, the gas temperature, and gas velocity are also made uniform. The flue gas then flows through the catalyst, in which the NO_x is converted in accordance with the reaction equations described above.

Conventional "tail-end" SCR systems utilize heat exchangers to recover energy present in the gas leaving the catalyst bed, transferring it to the incoming gas. A burner or other means of elevating the gas temperature is typically used ahead of the catalyst. The concept of the RSCR is to combine the heat recovery, temperature control and catalyst elements into a single unit and to provide for maximum heat recovery. See Appendix A for a diagram of the proposed RSCR system to be installed at the Whitefield facility.

The only significant emissions increase associated with the installation of the RSCR system is the emissions of excess ammonia that does not react with NO_x during the reaction process. An analysis was completed to ensure that the worst-case ammonia emissions comply with New Hampshire's ammonia Ambient Air Limits specified in Env-A 1400, *Regulated Toxic Air Pollutants*. Based on the worst-case permit limit of 20 ppm_{dv} of ammonia (at 6% O₂), which is equivalent to 2.64 pounds per hour of ammonia, the adjusted in-stack concentration of ammonia was calculated to be 18.1 microgram per cubic meter. The 24-hour and the annual Ambient Air Limits for ammonia are 100 micrograms per cubic meter. The calculation of the adjusted in-stack concentration in accordance with Env-A 1406.05, *Adjusted In-Stack Concentration Method* is demonstrated below:

X = The emission rate of the regulated toxic air pollutant in pounds per hour (**2.64 lb/hr of ammonia**)

Y = The emission rate of regulated toxic air pollutant in grams per second as determined by dividing X by 7.94 (conversion factor), as in the formula below:

$$X/7.94 \quad 2.64/7.94 = \mathbf{0.33 \text{ g/s of ammonia}}$$

Z = The emission rate of a regulated toxic air pollutant in micrograms per second as determined by multiplying Y by 1,000,000, as in the formula below:

$$Z = Y \times 10^6 = \mathbf{0.33 \times 10^6 \text{ } \mu\text{g/s of ammonia}}$$

A = The stack volume flow in actual cubic feet per minute (**Whitefield's Volumetric Stack Flow = 96,430 acfm**)

B = The stack volume flow in actual cubic meters per second as determined by dividing Z by 2119 (conversion factor), as in the formula below:

$$A/2119 \quad 96,430/2119 = \mathbf{45.5 \text{ acms}}$$

The in-stack concentration in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of a regulated toxic air pollutant is calculated by dividing Z by B, as in the formula below:

$$Z/B = 0.33 \times 10^6 / 45.5 = \mathbf{7252.7 \text{ } \mu\text{g}/\text{m}^3}$$

The adjusted in-stack concentration of a regulated toxic air pollutant in micrograms per cubic meter is calculated by dividing the in-stack concentration by 400, as in the formula below:

$$\text{In-stack Concentration}/400 = 7252.7/400 = \mathbf{18.1 \text{ } \mu\text{g}/\text{m}^3}$$

$$\begin{aligned} \text{AALs for NH}_3 \text{ CAS\# 7664-41-7: } & \mathbf{24\text{-hr} = 100 \text{ } \mu\text{g}/\text{m}^3} \\ & \mathbf{\text{Annual} = 100 \text{ } \mu\text{g}/\text{m}^3} \end{aligned}$$

The adjusted in-stack calculation for ammonia, as specified in New Hampshire Administrative Rules, Env-A 1406.05, *Adjusted In-Stack Concentration Method*, is a conservative method for predicting ambient concentrations of regulated toxic air pollutants. This methodology calculates the concentration of a particular pollutant inside the stack, where it is most concentrated, and compares this value to the Ambient Air Limits. An adjustment is made to the in-stack concentration to account for some dispersion of the pollutant in air but this method still provides the highest estimate of potential pollutant concentrations once the pollution exits the stack.

The combustion of all fuels including wood can create emissions of additional pollutants including volatile and semi-volatile organic compounds, inorganic compounds and metals. These byproducts of combustion can vary in type and quantity based on the fuel that is burned. New Hampshire does not regulate these resultant chemicals under its Regulated Toxic Air Pollutant Program when a facility burns "virgin" fuels such as whole tree wood chips, sawdust and clean processed wood fuels. The reasoning behind this exemption is that other state and federal regulations already exist that indirectly control emissions of regulated toxic air pollutants from fuel burning devices.

In addition, as a result of oxidation of the flue gas in the presence of ammonia, secondary formation of trace amount of pollutants including ammonium sulfates, ammonium nitrates and other SCR byproduct compounds may occur. Specific data regarding the formation of these byproducts is very limited. The biggest concern in this area however is the potential for increased formation of acid mist that may result in increased visible emissions. Because sulfur compounds are needed in this reaction, the best way to control acid mist formation is to limit the sulfur content of the fuel. In this particular application, Whitefield is limited to the use of low sulfur diesel fuel oil in the RSCR system and therefore, only small amounts of sulfur will be present in the flue gas. The New Hampshire Department of Environmental Services, Air Resources Division is not anticipating any issues with respect to secondary formation of particulates.

Discussion

During the public comment period and at the public hearing held on August 25, 2004, comments were received with respect to the Whitefield facility. The following discussion provides response to questions and/or concerns raised during the hearing or in written correspondence submitted prior to the close of the comment period.

1. *Has Whitefield been burning "Oriented Strand Board"?*

Whitefield is not permitted to burn Oriented Strand Board (OSB). Should Whitefield wish to change its fuel type, the facility would need to file an application with DES and obtain approval prior to burning any other wood fuel than that authorized in its permit.

2. *Oriented Strand Board has formaldehyde and resins (adhesives). Since formaldehyde has been outlawed in the United States, how can it be allowed to be burned at this plant?*

Whitefield does not have authorization to burn OSB.

3. *Does the "Pallet Wood" have all the nails pulled out? And what about all of the dirt, paints, and grease that accumulates?*

Whitefield is allowed to burn clean pallet wood that is not painted or stained. All nails should be removed prior to being chipped. In written testimony provided by

North Country Procurement, Inc. received on August 30, 2004, North Country Procurement, Inc. states that it has had the sole responsibility for wood fuel procurement at Whitefield since 1993. A portion of North Country Procurement, Inc.'s responsibilities include ensuring that the fuel meets the terms and conditions of Whitefield's permit. North Country Procurement, Inc. has stated that all fuels purchased have been whole tree chips, clean mill residues or pallet derived materials.

Whitefield participates in the land application of wood ash program, in accordance with the requirements specified in Env-WM 3400, *Requirements for Land Application of Wood Ash*. Pursuant to that program, the criteria for land application of wood ash is that only ash generated from the combustion of clean wood shall be land applied, expressly stating no paints, stains, preservatives and other materials or substances not naturally occurring in wood can be contained in the wood used for combustion. The land application program limits the concentration of heavy metals in the ash that can be land applied as follows:

Table 1: Maximum Allowable Concentrations of Metals in Wood Ash that is Land Applied in accordance with Env-WM 3403.02, <i>Quality</i>	
Metal	Concentration (milligrams/kilogram)
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	75
Nickel	420
Selenium	100
Zinc	2800

As a requirement of this program, Whitefield must test its wood ash on a quarterly basis using monthly composite samples in accordance with the United States Environmental Protection Agency's approved test procedures for cadmium, chromium, copper, lead, mercury, nickel, zinc, potassium, molybdenum, selenium, calcium, magnesium, vanadium, arsenic, boron, sodium, phosphorus, chlorides, percent carbon, and lime equivalence.

4. *The town of Whitefield has always been told that the "Power Plant" in Whitefield is only going to burn "Clean Wood Chips," then why should it (the permit) be changed, since these new changes involve toxic cancer causing agents?*

Whitfield is not requesting a change in fuel type. The facility is only authorized to burn whole tree wood chips and clean processed wood fuel (wood fuel that exhibits characteristics equivalent to whole tree wood chips and sawdust with respect to the ultimate and proximate analysis of the fuel).

The facility was previously authorized to use propane or natural gas in a small burner for startup and flame stabilization. The facility never installed this burner and

therefore does not have the capability of burning propane or natural gas in the boiler. Also, the facility was previously authorized to burn a small amount of specification used oil in combination with a shipment of sawdust in the boiler. However, the facility has never operated in this manner and therefore, has requested the removal of this provision from the permit.

5. *What are all the different chemicals used for at Whitefield Power & Light? Sulfuric Acid Caustic 1200, 1500 us gal, Chlorine, Betz778p, Betz5449A 800, 450US gal, Betz1138, Betz 1192,40,450 us gal, CT36,450 gal, Continuum ACE 3132, Ammonia, 8,000 gal, Diesel Fuel, Glycol, 200, etc.*

Whitefield uses a variety of chemicals products in the industrial equipment at the facility. These are very commonly used chemicals in industrial applications, most of which are used for water treatment. The following is a list of products used at the facility and a description what each product is used for:

Table 2: Description of Chemicals Used at Whitefield	
Product Name	Description of Use
Sulfuric Acid	<ul style="list-style-type: none"> Used for pH control in the cooling tower water, and As a cleaning agent for the boiler makeup water purification system
Caustic Soda	<ul style="list-style-type: none"> Used for pH control in the boiler feed water and cooling tower clarifier, and As a cleaning agent for the boiler makeup water purification system
Sodium Hypochlorite (Chlorine)	This product is used for algae control in the cooling tower water.
Betz 778P	This product is no longer used. This has been replaced with Betz OS5900.
Betz OS5900	This product acts as an oxygen-scavenging agent in the boiler feed water.
Betz Otisperse HP54439	This product is a blended polymer used to treat the boiler feed water. It protects the metal surfaces from pitting and corrosion.
Betz 1138	This product is used in the cooling tower water clarifier. It is considered a coagulant that precipitates out scale forming contaminants in the cooling water that would retard heat transfer in the turbine condenser.
Betz 1192	This product is used in the cooling tower water clarifier in conjunction with 1138. It acts as a flocculant to form a bed that combines to harmful contaminants like silica that would adhere to metal surfaces, retarding heat transfer and causing failure.
CT 36	This product is no longer used. It has been replaced with Betz AEC 3132
Betz AEC 3132	This product is a blended polymer that acts to protect the turbine condenser metals from attack due to contaminants in the cooling water.
Ammonia (NH ₃)	Ammonia will be used as a reaction agent in the RSCR system to breakdown emissions of NOx to nitrogen and water.
Diesel fuel (low sulfur)	Diesel fuel oil is currently used in the front-end loaders, emergency generator, and fire pump. It will also be burned in the RSCR system to achieve the optimum temperatures for NOx conversion.
Glycol	This product is used in the front end loader cooling systems. Also used in a closed loop system for fan bearing cooling.

6. *Could this be the reason I have “smelled” sickening odors for the past few years? I have called Judy Ramsdell (our selectmen’s secretary) many times and complained about the sickening odors and even called the DES, with no response, why?*

The New Hampshire Department of Environmental Services, Air Resources Division has reviewed its complaint file and does not have a record of any complaints logged for Whitefield Power and Light. Therefore, it is difficult to assess the type and origin of the odors described.

DES has also reviewed the chemicals listed in item 5 above and does not believe these would be responsible for any odors coming from the plant. The above chemicals are all contained in closed containers minimizing odors during storage. For those chemicals being added to the cooling tower system, which is similar to systems installed in other power plants across the state, DES has not observed any significant odors emanating from any cooling tower system including Whitefield. For chemicals being added to the boiler feed water system, no odor would be expected since the steam/boiler feed water cycle is a closed (completely contained) system. In rare events, where steam would be vented, odors are typically not associated with such activity.

7. *If waste is “Clean and Green” why do they have to use other pollutants, such as ammonia, diesel fuel and all kinds of other chemicals that we all know are cancer causing agents that affect the human body and cause many other diseases?*

As discussed in the “Proposed Project Description” section of this document, ammonia is used in the RSCR system as a reacting agent to drive the reaction of converting emissions of nitrogen oxides into nitrogen and water in the presence of heat and a catalyst. In order for the reaction to occur, the flue gas must be reheated to approximately 500 °F. Two small diesel fuel oil burners, located within the RSCR system, are used to reheat the incoming flue gas to the proper temperature to reduce the nitrogen oxide emissions.

Emissions of ammonia from the RSCR system were reviewed with respect to New Hampshire’s Regulated Toxic Air Pollutants Program (New Hampshire Administrative Rules Env-A 1400, *Regulated Toxic Air Pollutants*). Worst-case emission levels demonstrated compliance with the 24-hour and annual standard for ammonia.

Diesel fuel oil will be used in the RSCR system as fuel for the two small burners used to reheat the flue gas to the proper reaction temperature. These burners are below the permitting threshold specified in Env-A 607.01, *Specific Applicability for Temporary Permits*, to require a permit. They are listed in this draft permit because they are an integral part of the RSCR system. Diesel fuel is also used at the facility to operate other industrial equipment such as front end loaders, an emergency generator, and a fire pump. The emissions from this equipment are very small in comparison to the wood-fired boiler.

8. *Where will the dump site be for the waste from the wood ash or whatever else it is going to be called?*

Nothing will change with respect to the disposal of the wood ash. Currently, Whitefield participates in the wood ash land application program. Since the RSCR is a "tail-end" system and will be located after the particulate matter control equipment (multicyclone and electrostatic precipitator), it will have no impact on the wood ash either collected either from the boiler (bottom ash) or the particulate matter control equipment (fly ash).

9. *What happens to the waste water?*

The Whitefield plant is a zero water discharge facility which means that there is no water discharge from the plant. All facility waste water generated (e.g. any boiler water discharge, pump water seal leakage, etc.) is collected in the main plant waste sump, which is a concrete basin located at the bottom of the boiler house. From here there are two waste sump pumps that can directly transfer the waste water to the circulating water return to the cooling tower basin. There is also an overflow line from the sump that allows for water to flow directly to a lined waste water retention pond. Most commonly the sump is allowed to overflow directly to the retention pond. The level in the waste retention pond is closely monitored and during certain times of the year the level is reduced by transferring the waste water to the cooling tower basin for reintroduction to the process. Rainfall will dilute and add to the retention pond level and require additional transfers to the cooling tower basin. Additionally, periods of hot dry weather will evaporate pond water and necessitate fewer transfers to the cooling tower. The waste water retention pond will hold approximately 300,000 gallons of treated water. Three monitoring wells located adjacent to the pond and cooling tower (one at a higher level and two below the pond) are tested by an independent laboratory every 6 months and the reports forwarded to the New Hampshire Department of Environmental Services, Water Resources Division.

10. a. *The old "Permit" only allows not more than 55 gallons of specification used oil mixed with 25 tons (full truck load) of sawdust and not more than 1000 gallons of specification used oil to be generated at the Whitefield facility in the EU1- Boiler with clean wood chips in one year. This "new permit" is for the new RSCR system that will allow 11.56 tons per year of ammonia, 112,000 gallons of number 2 diesel fuel oil, pallets and processed wood chips to be burned.*

The facility's previously issued Title V Operating Permit authorized the facility to burn a small amount of specification used oil mixed with a shipment of sawdust in the boiler. As stated above, Whitefield never actually operated in this manner and therefore has now requested that this authorization be removed from the permit.

With the installation of the RSCR system, Whitefield will be burning some low sulfur diesel fuel oil to reheat the flue gas to the proper reaction temperature. This will

occur in the RSCR system and not in the wood-fired boiler itself. Two burners with a combined maximum heating value of 1.8 million BTU/hour will be located within the RSCR system. Emission from the burning of diesel fuel oil will be treated in the catalyst portion of the RSCR system and exited out the boiler stack.

These two burners are too small in size to require a permit. The threshold for fuel burning devices burning Number 2 diesel fuel oil is 10 million BTU/hr. They are included in the permit solely because they are an integral part of the RSCR system.

b. *In my opinion using the terms that are in the title V Permit "Clean Processed Wood Fuel," leaves the town of Whitefield wide open for many things to be added to the Power Plant. Would you comment on this?*

The term clean processed wood fuel is understood to mean wood products that do not contain paints, stains, preservatives, or other materials or substances not naturally occurring in wood. Examples of allowable wood fuels include, whole tree wood chips, bark, sawdust, clean wood mill residues, and pallet derived wood material. Examples of wood material that is **not** allowed includes, painted wood, stained wood, telephone poles, railroad ties, and construction/demolition wood waste.

11. *I understand that this Regenerative Selective Catalytic Reduction System is one of a kind and that "our" town has been chosen for this experiment, is this true?, and if this system is being presently used somewhere else, then where, name of plant, or plants, city, and state. What testing will be done to make sure that the plant will not emit more than allowed by its permit? How often will the state come in each year for each of the next five years to monitor the plant? How much of the monitoring of this plant is done by employees of the plant as opposed to the State doing it?*

The RSCR system is a unique application of a very commonly used technology. Selective catalytic reduction systems to reduce NOx emissions have been in use since the 1970s with hundreds in service around the country and worldwide. What makes this particular application unique is the fact that the SCR will be installed on a wood-fired boiler plant after the particulate matter control equipment. In order for the SCR to work, the flue gas must be within a certain temperature range depending upon what is used as a catalyst. Because the temperature of the flue gas drops significantly as it passes through the particulate matter control equipment, the temperature of the flue gas must be raised to meet the correct temperature range. The RSCR system incorporates two burners in the system that heats the incoming flue gas. In addition, the RSCR system has technology within the system to recover some of the heat to reduce fuel costs and utilize the waste heat.

The permit contains various testing, monitoring, recordkeeping and reporting requirements to ensure that the RSCR system is operating as designed. These requirements are listed below:

Monitoring Requirements:

- Continuous Emissions Monitoring (CEM):
 - The facility operates continuous emissions stack monitors for opacity, carbon monoxide, carbon dioxide, nitrogen oxides and stack volumetric flow.
 - The facility contracts with a third party consultant with DES oversight to perform annual relative accuracy test audits on the CEM equipment.
- Multicyclone (Primary particulate control equipment):
 - The facility monitors pressure drop across the multicyclone.
- Electrostatic Precipitator (Secondary pollution control equipment):
 - The facility operates an energy management system that controls the primary voltage to the electrostatic precipitator such that opacity is kept at 3-7% as read on the opacity monitor.
- RSCR System:
 - The facility will be continuously monitoring ammonia flow to the system.
 - The facility will be continuously monitoring the catalyst bed temperature.
 - The facility will use the stack NO_x CEM readings as the primary indicator of the control achieved by the RSCR system. Ammonia injection rates will be modulated to maintain the lower NO_x emissions that the RSCR provides.
 - The daily average ammonia flow rate will be compared to the daily average stack NO_x emissions. This ratio will provide an indicator of unit performance on a daily basis and will be reported to DES quarterly.
 - The facility will conduct an initial and annual compliance stack test for ammonia stack emissions (slip) under DES oversight. Such testing will confirm RSCR performance with respect to ammonia slip.
 - The facility will be monitoring the sulfur content of the diesel fuel oil used in the RSCR system.

Recordkeeping Requirements:

- The facility is required to keep records of all continuous emissions stack monitoring data for opacity, carbon monoxide, carbon dioxide, nitrogen oxides and volumetric flow.
- The facility is required to keep records of all relative accuracy test audits performed on the CEM equipment.
- The facility is required to keep records of all stack testing.
- The facility is required to keep monthly records of fuel consumption (type and amount)
- The facility will be required to keep daily ammonia usage records.
- The facility will be required to keep records of average daily ammonia flow.
- The facility will be required to keep records of the ratio of the average daily ammonia flow to the average daily NO_x emissions (based on NO_x CEM data).
- The facility will be required to keep records of the average daily RSCR catalyst bed temperature.

- The facility is required to keep records of all maintenance and repairs completed on any equipment regulated by air permits.
- All records must be kept by the facility for a period of at least 5 years.

Reporting Requirements:

- Annual Reports:
 - The facility is required to report actual annual emissions for criteria pollutant and regulated toxic air pollutants.
 - The facility is required to report the annual fuel usage by type and amount.
 - The facility is required to pay emissions-based fees in accordance with Env-A 700, *Permit Fee System*.
 - The facility is required to submit reports of all stack testing and relative accuracy test audits.
 - The facility is required to submit an annual compliance certification in accordance with the Title V Operating Permit.
- Quarterly Reports:
 - The facility is required to submit quarterly excess emission reports based on the CEM data.
 - The facility will be required to submit quarterly reports of the daily ammonia usage records.
 - The facility will be required to submit quarterly reports of the average daily ammonia flow.
 - The facility will be required to submit quarterly reports of the ratio of the average daily ammonia flow to the average daily NO_x emissions (based on NO_x CEM data).
 - The facility will be required to submit quarterly reports of the average daily RSCR catalyst bed temperature.
- The facility is to report all maintenance and repairs completed on any equipment regulated by air permits in accordance with the schedule required in the permits.

Compliance Oversight:

DES performs the following activities to monitor Whitefield's compliance status:

- On site work:
 - Annually, a New Hampshire Department of Environmental Services, Air Resources Division engineer spends a full day at the plant overseeing the annual relative accuracy test audit (RATA). This testing is performed by a company contracted by Whitefield in order to check the accuracy of the continuous emissions monitoring systems installed at the facility. The New Hampshire Department of Environmental Services, Air Resources Division representative is there to ensure the integrity of the testing procedure. While at the facility, the engineer also checks compliance status of the facility with the permit and collects representative process information such that operation of the facility can be compared to past years.

- Annually, a New Hampshire Department of Environmental Services, Air Resources Division representative will be overseeing the annual ammonia slip testing required to be conducted in the new Temporary Permit. It is expected that this testing will be performed on the same day as the RATA testing above. All relevant process data will be reviewed and evaluated to determine the compliance status of Whitefield Power and Light.
- Every five years, an unannounced comprehensive inspection is performed at the facility to check compliance of the facility with all requirements of the Title V permit. This inspection requires 1-day preparation, 4-8 hours at the facility collecting relevant compliance information and several hours summarizing findings. A full compliance inspection was performed at Whitefield Power and Light in July, 2002 and a determination was made that the facility was in compliance.
- Off-site work:
 - Every 2 years, a full compliance evaluation is conducted where all reports submitted by Whitefield Power and Light are reviewed and a compliance assessment is made. Further action is taken if necessary.
 - Annually, the Title V compliance certification report is reviewed to determine level of compliance with the Title V permit. Also, the semi-annual permit deviation reports and monitoring reports are reviewed.
 - Annually, the emissions inventory report submitted by the facility is reviewed and compared against the emission-based fees paid.
 - As received, any permit deviation notification received by telephone within 24 hours of occurrence and subsequent reports submitted within 15 days of the occurrence are reviewed and logged into the New Hampshire Department of Environmental Services, Air Resources Division database.
 - On a quarterly basis, the excess emissions report submitted presenting plant excess emissions as measured by the CEM system, daily averages of the CEM readings, and other information submitted is reviewed for compliance. Daily emissions are plotted for comparison against previously reported emissions and trended for the year. A compliance assessment is made.
 - On a quarterly basis, the audit reports for each CEM are reviewed to determine if the CEM meets the accuracy and quality assurance requirements imposed by Federal and New Hampshire regulations.

12. *What testing if any has the State done of the deposition of the land to establish a baseline for lead and mercury?*

The State has not completed any baseline deposition monitoring for lead or mercury in this area. There is no specific state or federal rule requiring a deposition study. The facility is authorized to burn whole tree wood chips and/or clean processed wood fuel that exhibits fuel characteristics equivalent to whole tree wood chips and sawdust

with respect to the ultimate and proximate analysis of the wood fuel. The New Hampshire Department of Environmental Services, Air Resources Division believes that such a study is not necessary for the installation of the RSCR system.

13. *Where is the fuel coming from? Out of State? How will it be transported to the site? How much money will the plant make as a consequence of burning the new fuel.*

The location and transportation of the permitted fuel is not relevant to this permit. DES does not have the authority to restrict the purchase and use of out of state fuels. The facility is not burning any new type of fuel.

14. *What exactly will they be burning opposed to what they were allowed to burn in the past?*

The facility is not burning any new type of fuel in the wood-fired boiler. They have been permitted to burn whole tree wood chips and clean processed wood fuel, which is considered fuel that exhibits characteristics equivalent to whole tree wood chips and sawdust with respect to the ultimate and proximate analysis of the fuel.

As part of this permitting process, the facility will be authorized to burn Number 2 fuel oil in the RSCR system.

15. *Where is the largest fall out area from the stack emissions?*

Based on similarly sized facilities that have been permitted in the state, DES estimates that the large majority of emissions from the facility will be deposited within approximately 5 miles of the facility. On a yearly basis, the area to the southwest of the facility would typically receive the largest fallout due to the prevailing wind conditions.

16. *Is the proposed anti pollution devices up to BACT standards (best available control technology)?*

Best Available Control Technology Standards are case-by-case standards that take in account various factors including emissions, economics, environmental, and technical feasibility, etc. A specific BACT analysis was not required in this case because Whitefield did not trigger any of the federal Prevention of Significant Deterioration Program requirements. Whitefield is voluntarily installing the RSCR system to reduce NO_x emissions to qualify for renewal energy credits in other states. However, in many cases across the country technologies such as selective catalytic reduction and electrostatic precipitators have been determined to be BACT for the removal of NO_x and particulate matter emissions respectively.

17. *Has the State evaluated the effects on the water supply (rivers and wells) and what are the endangered species in the area that must be considered?*

The New Hampshire Department of Environmental Services, Air Resources Division is required to review applications for permits based on the applicable state and federal regulations. Currently, there exists no state or federal regulations with respect to deposition of air pollutants onto land or surface waters. The state regulates sources of air emissions based on standards established either by the United States Environmental Protection Agency (EPA) or the New Hampshire Department of Environmental Services, Air Resources Division, in consultation with the New Hampshire Department of Health and Human Services. The federal standards developed by the EPA (i.e., National Ambient Air Quality Standards) exist for a set of pollutants known as criteria pollutants. These pollutants include carbon monoxide, particulate matter less than 10 microns in diameter, sulfur dioxide, nitrogen oxides, ozone and lead. These standards have been established to be protective of public health and welfare. Each of these pollutants has a primary ambient air quality standard that is developed to protect public health and a secondary standard that is developed to protect the public welfare from any known or anticipated adverse effects of a pollutant including the well-being of animals and vegetation and the maintenance of property.

The New Hampshire Regulated Toxic Air Pollutant Program regulates approximately 750 chemical compounds, including ammonia. The standards established under this program are inhalation standards developed to protect human health. These standard were developed in consultation with the New Hampshire Department of Health and Human Services.

A review was completed and the proposed installation of the RSCR system meets all applicable air quality standards. The New Hampshire Department of Environmental Services, Air Resources Division does not anticipate any adverse environmental impacts.

18. *Where is the deposition map that the State often prepares to advise the town where the primary fall out will land?*

This project did not require a full air dispersion modeling analysis because the emission increases, specifically ammonia, demonstrated compliance using the adjusted in-stack concentration method. Therefore, a deposition map was not created. As stated in number 15 above, based on similarly sized facilities that have been permitted in the state, DES estimates that the large majority of emissions from the facility will be deposited within approximately 5 miles of the facility. On a yearly basis, the area to the southwest of the facility would typically receive the largest fallout due to the prevailing wind conditions.

19. Do you have a list of the emitted toxins and allowable amounts for the town to review?

The table below contains calculated annual emission rates of Regulated Toxic Air Pollutants (RTAPs) emitted from wood-fired electric utilities in New Hampshire. The listed RTAPs are mainly products of the incomplete combustion of naturally occurring materials found in wood chips derived from whole trees. These compounds are also emitted from the combustion of most fuels including gasoline, home heating oil, coal and other fuels. Emissions of several RTAPs are tracked and reported by DES for all permitted sources on an annual basis. Of those tracked and reported, 27 have been measured in wood combustion emissions. Although combustion of clean fuels (such as wood) is exempt from the NH Air Toxics Control Program, a June 2003 report from the *Legislative Committee to Study the Public Health and Environmental Benefits of Requiring Stationary and Mobile Sources that Burn Virgin Petroleum Products of Coal to Comply with the NH Air Toxics Control Act* (SB 93, Chapter 088, Section 001, Laws of 2001) found that "emissions from stationary and area sources burning coal, wood, or virgin petroleum products already comply with the requirements of the New Hampshire Air Toxics Control Program". The Committee's report further concludes that these sources "do not currently represent major health risks from toxic air pollutant emissions, and that expanding the New Hampshire Air Toxics Control Act to include these sources would do little at this time to improve air quality and human health in the state".

Table 3: Regulated Toxic Air Pollutants - Calendar Year 2002 Emissions in Tons Per Year						
Regulated Toxic Air Pollutant	Bio-Energy Corp. ¹	Bridgewater	Hemphill	Pinetree/Bethlehem	Pinetree/Tamworth	Whitefield
Acetaldehyde	0.0437	0.00132	0.00082	0.00152	0.00119	0.00051
Acrolein	0.131	1.05	0.640	1.22	0.952	0.409
Arsenic & Compounds	0.00224	0.0105	0.0200	0.00253	0.00495	0.00205
Benzene	0.00141	1.13	0.686	1.30	1.02	0.437
Beryllium & Compounds	0.000114	0.000530	0.000998	0.000126	0.000247	0.000102
Cadmium & Compounds	0.000418	0.00196	0.00372	0.000471	0.000922	0.000382
Carbon Tetrachloride	0.00148	0.0119	0.00721	0.0137	0.0107	0.00460
Chloroform	0.000973	0.00738	0.00449	0.00851	0.00667	0.00286
Chromium & Compounds	0.00214	0.0100	0.0191	0.00241	0.00472	0.00196
1, 2-Dichlorobenzene	0.000951	0.00764	0.00465	0.00882	0.00691	0.00296
Formaldehyde	0.204	1.17	0.705	1.33	1.05	0.450
Lead & Compounds	0.00489	0.0230	0.0153	0.00551	0.0108	0.00448
Manganese & Compounds	0.163	0.765	0.511	0.184	0.360	0.149
Mercury & Compounds	0.000360	0.00168	0.00112	0.000402	0.000787	0.000326
Nickel & Compounds	0.00338	0.0158	0.0106	0.00379	0.00742	0.00308
Styrene	0.0623	0.501	0.304	0.577	0.453	0.194

¹ Bio-Energy Corp. operated for only approximately 2 months during 2002.

Table 3: Regulated Toxic Air Pollutants - Calendar Year 2002 Emissions in Tons Per Year						
Regulated Toxic Air Pollutant	Bio-Energy Corp. ¹	Bridgewater	Hemphill	Pinetree/Bethlehem	Pinetree/Tamworth	Whitefield
2,3,7,8-TCDD TEQ	0.00000003	0.00000018	0.00000017	0.00000019	0.00000025	0.00000015
Toluene	0.000	0.242	0.147	0.280	0.219	0.0942
Vinyl Chloride	0.000592	0.00475	0.00288	0.00546	0.00429	0.00184
Xylene	0.00194	0.00659	0.00413	0.00760	0.00595	0.00255
Benzo(A)Pyrene	0.0000853	0.000686	0.000416	0.000790	0.000619	0.000266
Benzo(B)Fluoranthene	0.00000328	0.0000263	0.0000167	0.0000304	0.0000238	0.0000102
Benzo(K)Fluoranthene	0.00000118	0.00000949	0.00000591	0.0000109	0.00000858	0.00000368
Benz(A)anthracene	0.00000214	0.0000171	0.0000108	0.0000197	0.0000154	0.00000664
Chrysene	0.00000126	0.0000100	0.00000610	0.0000116	0.00000906	0.00000389
Dibenz(A,H)anthracene	0.00000030	0.00000240	0.00000168	0.00000277	0.00000217	0.00000093
Indeno(1,2,3-CD)Pyrene	0.00000285	0.0000230	0.0000142	0.0000264	0.0000207	0.00000889

20. *Is the State guaranteeing that the amounts of the emissions are absolutely safe? Or are you merely telling us that the plant simply meets certain criteria?*

The New Hampshire Department of Environmental Services, Air Resources Division has completed a review of all applicable state and federal air related federal requirements. Based on its review, the New Hampshire Department of Environmental Services, Air Resources Division has concluded that the installation of the RSCR system meets all of these requirements including applicable ambient air quality standards developed to protect public health.

21. *In June and July of this year I smelled a very gross stinky odor. Was this odor part of the test that was done on the Whitefield Power and Light? So what chemicals were tested?*

On May 26, 2004 Whitefield conducted their annual relative accuracy test audit through a 3rd party contractor with a DES engineer overseeing the testing. In addition, at the request of the Division, Whitefield performed total suspended particulate (TSP) and hydrogen chloride (HCl) testing. A DES engineer was at the facility during the entire period of the testing (approximately 8am – 5 pm) and there were no unusual odors detected. The testing results showed that at normal operating conditions, the plant emits approximately 13% of the TSP standard to which they are subject and the HCl emissions were non-detectable as determined by the laboratory conducting the analysis.

22. *What kind of security is there going to be at this power plant?*

The New Hampshire Department of Environmental Services does not have regulatory authority over issues relating to security.

23. *Questions relating to the confidential business information filed by Whitefield.*

Whitefield identified five documents submitted in the course of this permit process as containing confidential business information. As required by RSA 125-C:6, VII, and Env-A 103, *Claims of Confidentiality*, DES has treated those documents and their contents as confidential. The documents are described in the following table.

Table 4: Confidential Business Information Relating to the RSCR Application	
Date Filed	Document Type and Description
6/23/2004	RSCR Drawing
7/7/2004	Scope of Supply provided by Babcock Power Environmental, Inc.
6/25/2004	E-mail from Michele Andy of NHDES, ARD to Doug York of Whitefield relating to the RSCR catalyst
6/29/2004	E-mail from Bob Harold of Babcock Power Environmental, Inc. relating to the ammonia slip calculations
6/29/2004	E-mail from Bob Harold of Babcock Power Environmental, Inc. responding to questions about the catalyst

According to Whitefield, the five documents contain proprietary business information with respect to the RSCR system, including the system's catalyst. Since the public hearing, Whitefield has agreed to release information pertaining to the makeup of the catalyst. The catalyst will consist of a formulation of titanium, vanadium and tungsten, which is then applied to a ceramic substrate, or base. Since the formulation adheres to the substrate, no emissions of these metals will occur.

24. *Pollutants other than ammonia*

As stated in the "Proposed Project Description" Section of this document, the combustion of all fuels including wood can create emissions of additional air pollutants including volatile and semi-volatile organic compounds, inorganic compounds, and metals. These byproducts of combustion can vary in type and quantity based on the fuel that is burned. New Hampshire does not regulate these resultant chemicals under its Regulated Toxic Air Pollutant Program when a facility burns "virgin" fuels such as whole tree wood chips, sawdust and clean processed wood fuels. The reasoning behind this exemption is that other state and federal regulations already exist that indirectly control emissions of regulated toxic air pollutants from fuel burning devices.

In addition, when flue gas passes through selective catalytic reduction (SCR) or regenerative selective catalytic reduction (RSCR) control equipment, oxidation of some air pollutants occurs. Since ammonia is present, due to its injection into the flue gas prior to an SCR or an RSCR, some of the oxidized air pollutants may react with the ammonia to form trace amounts of ammonium sulfate and ammonium nitrate. Specific data regarding the formation of these secondary byproducts is very limited. The biggest concern in this area, however, is the potential for increased formation of acid mist that may result in an increase in visible emissions. Because sulfur compounds are needed in this reaction, the best way to reduce acid mist formation is to limit the sulfur content of the fuel being burned.

In this particular application, Whitefield is limited to the use of low sulfur diesel fuel in the RSCR control system and, therefore, only small amounts of sulfur trioxide (SO_3) will form due to the enhanced oxidation of sulfur compounds. This enhanced oxidation, which occurs when the flue gas passes through the RSCR system, causes sulfur dioxide (SO_2) to be converted to sulfur trioxide (SO_3). When released to the atmosphere SO_3 reacts with water vapor to form acid mist (H_2SO_4) and also reacts with the ammonia in the flue gas to form trace amounts of ammonium sulfate and ammonium nitrate. The New Hampshire Department of Environmental Services, Air Resources Division is not anticipating any issues with respect to the release of minimal amounts of SO_3 , the formation of acid mist (H_2SO_4), or the secondary formation of fine particulate matter.

25. *Air Dispersion Modeling Analysis*

The New Hampshire Department of Environmental Services, Air Resources Division has completed a review of the impact of ammonia, the only significant emissions increase as a result of the installation of the RSCR system, in accordance with the requirements specified in the Regulated Toxic Air Pollutant Program, Env-A 1400, *Regulated Toxic Air Pollutants*. Specifically, the New Hampshire Department of Environmental Services, Air Resources Division utilized the adjusted in-stack concentration methodology specified in Env-A 1406.05, *Adjusted In-Stack Concentration Method*. This approach is a conservative approach to predict ambient concentrations of ammonia surrounding the facility. As stated earlier, this method provides a very high estimate of pollutant concentrations since it is based on the concentration of material in the stack, where the pollution is the most concentrated. Since this conservative methodology predicted no violations of the ammonia Ambient Air Limits, an air dispersion modeling analysis was not required.

26. *Whitefield's request to amend the averaging time of the 0.075 lb/MMBTU NO_x limit*

In a letter dated August 30, 2004, Whitefield requested to amend the averaging time of the 0.075 lb/MMBTU NO_x limit that is contained in Item 13 of Table 3 in the draft Temporary Permit. The proposed averaging time contained in the draft Temporary Permit is a 24-hour calendar day average. Whitefield has requested to amend the averaging time of this limit to a quarterly basis. The New Hampshire Department of Environmental Services, Air Resources Division originally proposed the 24-hour averaging time to be consistent with existing NO_x regulatory control programs such as NO_x RACT and federal New Source Performance Standards. Given that the proposed 0.075 lb/MMBTU emission limitation is significantly more stringent than any other applicable NO_x and New Hampshire does not have a program requiring Whitefield to meet this more stringent emission limitation, the New Hampshire Department of Environmental Services, Air Resources Division believes it is reasonable to grant this request. By granting this request, there will be no increase in the potential emissions of NO_x from this facility on an annual basis.

Findings of Fact

The New Hampshire Department of Environmental Services, Air Resources Division has based its decision with respect to the draft Temporary Permit for the installation of the RSCR System on the following findings of fact.

1. In an application filed in accordance with the requirements of Env-A 607, *Temporary Permits*, on June 23, 2004, Whitefield Power and Light Company has proposed to voluntarily install a pollution control device known as a regenerative selective catalytic reduction system to reduce emissions of nitrogen oxides from the wood-fired boiler. With the installation of the RSCR system, permitted potential emissions of nitrogen oxides (NO_x) will be reduced by 175 tons per year.
2. In the June 23, 2004 application, Whitefield Power and Light Company did not request a change to any of its fuel types for the wood-fired boiler. The permitted fuels for this wood-fired boiler continue to be whole tree wood chips, sawdust and/or clean processed wood fuel that exhibits fuel characteristic equivalent to whole tree wood chips and sawdust with respect to the ultimate and proximate analysis of the fuel.
3. The only significant emissions increase associated with the installation of the RSCR system is ammonia emissions that do not react with NO_x during the NO_x conversion process. An analysis was completed using the adjusted in-stack concentration methodology specified in Env-A 1406.05, *Adjusted In-Stack Concentration Method*, and the worst-case ammonia emission rate based on the proposed permit limit of 20 ppmvd at 6% O₂. The result of the analysis indicates that emissions of ammonia from the RSCR system comply with the 24-hour and annual ammonia Ambient Air Limits contained in Env-A 1450, *Table Containing the List Naming all Regulated Toxic Air Pollutants*.
4. The combustion of all fuels including wood can create emissions of additional air pollutants, including volatile and semi-volatile organic compounds, inorganic compounds, and metals. These byproducts of combustion can vary in type and quantity based on the fuel that is burned. New Hampshire does not regulate these resultant chemicals under its Regulated Toxic Air Pollutant Program when a facility burns "virgin" fuels such as whole tree wood chips, sawdust and clean processed wood fuels. The reasoning behind this exemption is that other state and federal regulations already exist that indirectly control emissions of regulated toxic air pollutants from fuel burning devices
5. The New Hampshire Department of Environmental Services, Air Resources Division has completed a review of all applicable state and federal air related federal requirements. Based on its review, the New Hampshire Department of Environmental Services, Air Resources Division has concluded that the installation of the RSCR system meets all of these requirements including applicable ambient air quality standards developed to protect public health.

6. After consideration of comments received during the public comment period, the New Hampshire Department of Environmental Services, Air Resources Division has made the following changes to the draft Temporary Permit.
- a. On page 1 pertaining to the county in which the source is located, the name has been changed from Hillsborough to Coos County.
 - b. Item 2 of Table 3 has been changed to clarify what fuels the facility is authorized to burn in the wood-fired boiler and the RSCR system. The permit has been revised to read:

Item #	Applicable Requirement	Applicable Emission Unit	Basis
2.	<ul style="list-style-type: none">a. The Permittee is authorized to burn the following fuels in EU1:<ul style="list-style-type: none">i. Whole tree wood chips at approximately 55% moisture (approximately 7.65 MMBTU/ton);ii. Sawdust;iii. Clean processed wood fuel² (approximately 7.65 to 13.5 MMBTU/ton); oriv. Any combination of 2.a.i., 2.a.ii., or 2.a.iii.b. The Permittee is authorized to burn Number 2 diesel fuel oil in PCE3.	EU1 & PCE3	TV-OP-007, and Temporary Permit Application Dated 6/23/2004

- c. A correction has been made to the CO limitation contained in Item 10 of Table 3 of the draft Temporary Permit. An incorrect limit of 125 lbs/hr averaged over each calendar day was inadvertently typed into the draft Temporary Permit. The actual limit should be 225 lbs/hr averaged over each calendar day as contained in Section VIII.C.8. of the facility's Title V Operating Permit, TV-OP-00, issued on November 15, 2001 and in previous State Operating Permits issued by the Division. No changes were made to any other CO emission limitation. The installation of the RSCR system will not have any impact on the CO emissions from this facility.
- d. The averaging time of the NO_x limitation of 0.075 lb/MMBTU contained in Item 13 of Table 3 of the draft Temporary Permit was changed from a 24-hour calendar day average to a quarterly average.

² Clean processed wood fuel is considered to be fuel that exhibits fuel characteristics equivalent to "whole tree wood chips" and "sawdust" with respect to the ultimate and proximate analysis of the fuel.

- e. Changes have been made to Items 16 and 17 of Table 3 of the draft Temporary Permit to clarify the opacity standard for the wood-fired boiler. The exemption statement contained in Item 16 has been removed so that all exemptions to the opacity standard stated in Item 16 will be contained in Item 17. Item 17 has been revised to clarify when the exemption to that opacity standard applies. They now read as follows:

Item #	Applicable Requirement	Applicable Emission Unit	Basis
16.	No owner or operator shall cause or allow average opacity from fuel burning devices installed after May 13, 1970 in excess of 20 percent for any continuous 6-minute period.	EU1	Env-A 2003.02 (formerly Env-A 1202.02) & Subpart Db 40 CFR 60.43b(f)
17.	<p>The following items a.1. or a.2., and b. are exempt from the opacity standard specified in Item 16 of Table 3 above:</p> <p>a. One 6-minute continuous period per hour for opacity:</p> <ol style="list-style-type: none"> Greater than 20 percent during periods of startup, shutdown and malfunction, or Within 20 to 27 percent during normal operation, soot blowing, grate cleaning, and cleaning of fires. <p>b. Any 6-minute continuous exceedance of the opacity standard where Whitefield demonstrates to DES that such exceedances:</p> <ol style="list-style-type: none"> Were the result of the adherence to good boiler operating practices which, in the long term, result in the most efficient or safe operation of the boiler; Occurred during periods of cold startup of a boiler over a continuous period of time resulting in efficient heat-up and stabilization of its operation and the expeditious achievement of normal operation of the unit; Occurred during periods of continuous soot blowing of the entire boiler tube section over regular time intervals as determined by the operator and in conformance with good boiler operating practice; and Were the result of the occurrence of an unplanned incident in which the opacity exceedances was beyond the control of the operator and in response to such incident, the operator took appropriate steps in conformance with good boiler operating practice to eliminate the excess opacity as quickly as possible. 	EU1	Env-A 2003.04(c)(d) (e)(2)& (f) & 40 CFR 60.43b(g)

- f. In Item 8 of Table 4, the reference to Bridgewater is incorrect and has been changed to Whitefield.
- g. Changes have been made to Section IX. of the draft Temporary Permit to reflect recent amendments to the permit fee system rule contained in Env-A 700, *Permit Fee System*. These change include corrections to rule citations and a revision to the emission-based fee payment schedule.

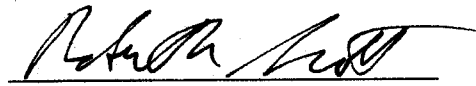
Director's Decision

After consideration of the Temporary Permit Application, supplements thereto, and all public comments, the application is approved subject to the revisions to the draft permit noted above, and a final Temporary Permit is hereby issued.

Pursuant to New Hampshire Revised Statutes Annotated 125-C:12, III and Env-A 621.10, *Appeals*, any person aggrieved by this action may file a petition for appeal with the Air Resources Council which shall be received within 10 days of the date below. Such appeal and 15 copies shall be filed in accordance with the provisions of Env-AC 200, *Procedural Rules* and forwarded to the Chair of the Air Resources Council at the address below:

Chair of the Air Resources Council
c/o DES, Air Resources Division
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095
ATTN: ARC Council Clerk

If no petition is filed within the 10-day period, this decision will become final.



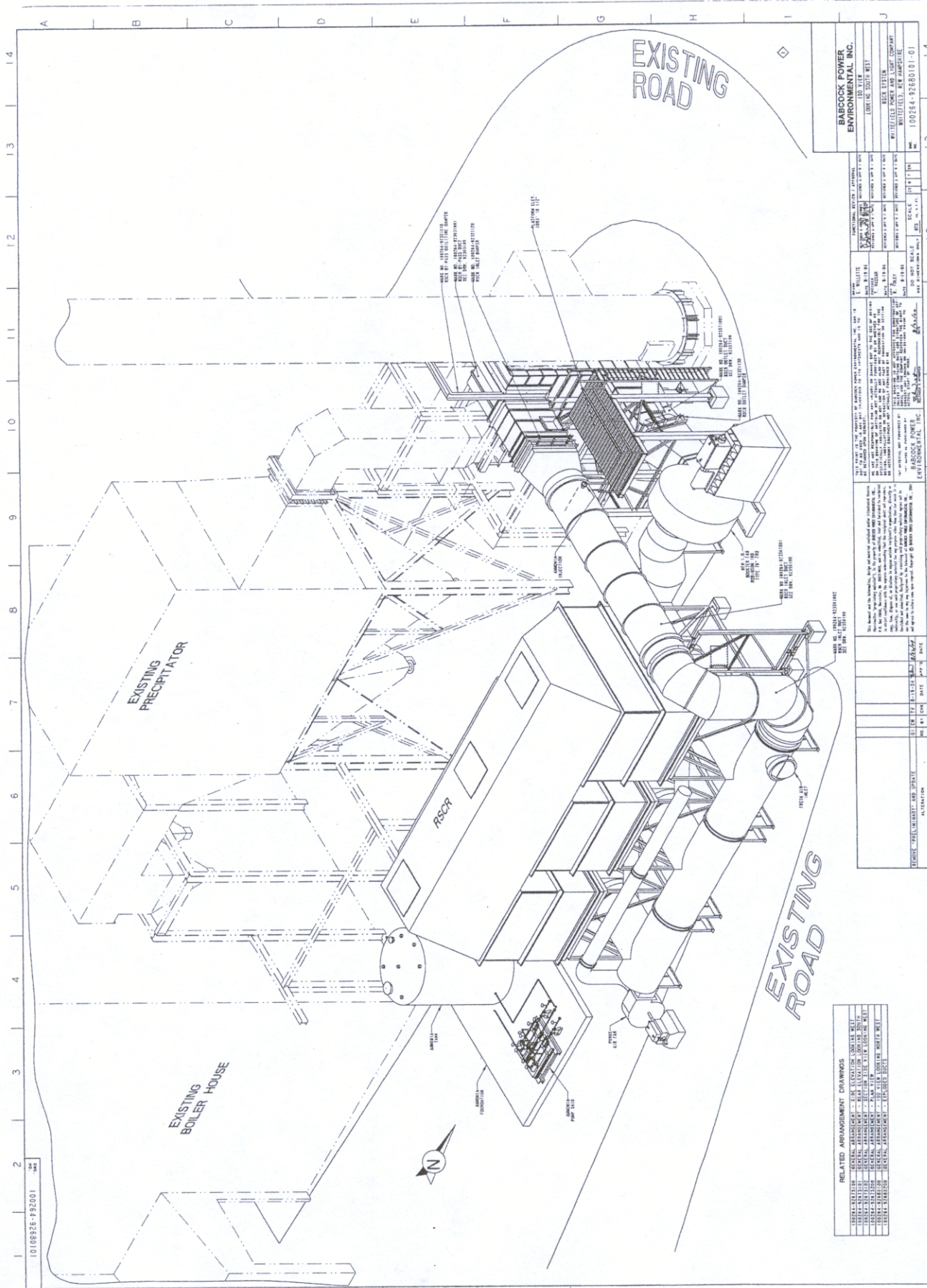
Robert R. Scott
Director
Air Resources Division

Sept 10, 2004
Date

cc: Ida McDonnell, USEPA, Region I
Tim Drew (PIP)
Town of Whitefield
Executive Councilor Raymond Burton
Hearing Attendees

Appendix A

Babcock Power Environmental, Inc. RSCR Diagram



RELATED ARRANGEMENT DRAWINGS	
100254-224100	GENERAL ARRANGEMENT - SEE ELEVATION
100254-224101	GENERAL ARRANGEMENT - SEE ELEVATION
100254-224102	GENERAL ARRANGEMENT - SEE ELEVATION
100254-224103	GENERAL ARRANGEMENT - SEE ELEVATION
100254-224104	GENERAL ARRANGEMENT - SEE ELEVATION
100254-224105	GENERAL ARRANGEMENT - SEE ELEVATION
100254-224106	GENERAL ARRANGEMENT - SEE ELEVATION
100254-224107	GENERAL ARRANGEMENT - SEE ELEVATION
100254-224108	GENERAL ARRANGEMENT - SEE ELEVATION
100254-224109	GENERAL ARRANGEMENT - SEE ELEVATION
100254-224110	GENERAL ARRANGEMENT - SEE ELEVATION

BABCOCK POWER ENVIRONMENTAL INC. 100254-224101-01 100254-224101-01	
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